Grade 8 | Oregon Mathematics Standards Correlation to *Eureka Math²®*

When the original *Eureka Math®* curriculum was released, it quickly became the most widely used K–5 mathematics curriculum in the country. Now, the Great Minds® teacher–writers have created *Eureka Math²®*, a groundbreaking new curriculum that helps teachers deliver exponentially better math instruction while still providing students with the same deep understanding of and fluency in math. *Eureka Math²* carefully sequences mathematical content to maximize vertical alignment—a principle tested and proven to be essential in students' mastery of math—from kindergarten through high school.

While this innovative new curriculum includes all the trademark *Eureka Math* aha moments that have been delighting students and teachers for years, it also boasts these exciting new features:

Teachability

Eureka Math² employs streamlined materials that allow teachers to plan more efficiently and focus their energy on delivering high-quality instruction that meets the individual needs of their students. Differentiation suggestions, slide decks, digital interactives, and multiple forms of assessment are just a few of the resources built right into the teacher materials.

Accessibility

Eureka Math² incorporates Universal Design for Learning principles so all learners can access the mathematics and take on challenging math concepts. Student supports are built into the instructional design and are clearly identified in the *Teach* book. Further, the curriculum carries a focus on readability. By eliminating unnecessary words and using simple, clear sentences, the *Eureka Math²* teacher–writers have created one of the most readable mathematics curricula on the market. The curriculum's readability and accessibility help all students see themselves as mathematical thinkers and doers who are fully capable of owning their mathematics learning.

Digital Engagement

The digital elements of *Eureka Math²* add to students' engagement with the math. The curriculum provides teachers with digital slides for each lesson. In addition, each grade level includes wordless videos that spark students' interest and curiosity. Students at all levels work through mathematical explorations that help lead to their own mathematical discoveries. Digital lessons and videos provide opportunities for students to wonder, explore, and make sense of mathematics, which contributes to the development of a strong, positive mathematical identity.

Algebraic Reasoning: Expressions and Equations

8.AEE.A Expressions and equations work with radicals and integer exponents.

Oregon Mathematics Standards	Aligned Components of *Eureka Math²*
8.AEE.A.1 Apply the properties of integer exponents using powers of 10 to generate equivalent numerical expressions.	M1 L5: Products of Exponential Expressions with Whole-Number Exponents M1 L6: More Properties of Exponents M1 L7: Making Sense of the Exponent of 0 M1 L8: Making Sense of Integer Exponents M1 L9: Writing Equivalent Expressions M1 L10: Evaluating Numerical Expressions by Using Properties of Exponents
8.AEE.A.2 Represent solutions to equations using square root and cube root symbols.	M1 L16: Perfect Squares and Perfect Cubes M1 L17: Solving Equations with Squares and Cubes M1 L20: Square Roots M1 L22: Familiar and Not So Familiar Numbers M1 L24: Revisiting Equations with Squares and Cubes
8.AEE.A.3 Estimate very large or very small quantities using scientific notation with a single digit times an integer power of ten.	M1 L1: Large and Small Positive Numbers M1 L2: Comparing Large Numbers M1 L3: Time to Be More Precise–Scientific Notation M1 L7: Making Sense of the Exponent of 0 M1 L11: Small Positive Numbers in Scientific Notation
8.AEE.A.4 Perform operations with numbers expressed in scientific notation.	M1 L2: Comparing Large Numbers M1 L4: Adding and Subtracting Numbers Written in Scientific Notation M1 L12: Operations with Numbers in Scientific Notation M1 L13: Applications with Numbers in Scientific Notation M1 L14: Choosing Units of Measurement M1 L15: Get to the Point

Algebraic Reasoning: Expressions and Equations

8.AEE.B Understand the connections between proportional relationships, lines, and linear equations.

Oregon Mathematics Standards	Aligned Components of *Eureka Math²*
8.AEE.B.5 Graph proportional relationships in authentic contexts. Interpret the unit rate as the slope of the graph, and compare two different proportional relationships represented in different ways.	M4 L15: Comparing Proportional Relationships M4 L16: Proportional Relationships and Slope
8.AEE.B.6 Write the equation for a line in slope intercept form $y = mx + b$, where m and b are rational numbers, and explain in context why the slope m is the same between any two distinct points.	M3 L17: Similar Triangles on a Line M4 L16: Proportional Relationships and Slope M4 L17: Slopes of Rising Lines M4 L18: Slopes of Falling Lines M4 L19: Using Coordinates to Find Slope

Algebraic Reasoning: Expressions and Equations

8.AEE.C Analyze and solve linear equations and pairs of simultaneous linear equations.

Oregon Mathematics Standards	Aligned Components of *Eureka Math²*
8.AEE.C.7 Solve linear equations with one variable including equations with rational number coefficients, with the variable on both sides, or whose solutions require using the distributive property and/or combining like terms.	M4 L1: Equations M4 L2: Solving Linear Equations M4 L3: Solving Linear Equations with Rational Coefficients M4 L4: Using Linear Equations to Solve Problems M4 L5: An Interesting Application of Linear Equations, Part 1 M4 L6: An Interesting Application of Linear Equations, Part 2

Oregon Mathematics Standards	Aligned Components of *Eureka Math²*
8.AEE.C.7 ***continued***	M4 L7: Linear Equations with More Than One Solution M4 L8: Another Possible Number of Solutions M4 L9: Writing Linear Equations M4 L10: Using Linear Equations to Solve Real-World Problems M4 L11: Planning a Trip
8.AEE.C.8 Find, analyze, and interpret solutions to pairs of simultaneous linear equations using graphs or tables.	M5 L1: Solving Problems with Equations and Their Graphs M5 L2: Introduction to Systems of Linear Equations M5 L3: Identifying Solutions M5 L4: More Than One Solution M5 L5: Estimating Solutions M5 L6: Solving Systems of Linear Equations Without Graphing M5 L7: The Substitution Method M5 L8: Using Tape Diagrams to Solve Systems of Equations M5 L9: Rewriting Equations to Solve a System of Equations M5 L10: Choosing a Solution Method M5 L11: Writing and Solving Systems of Equations for Mathematical Problems M5 L12: Solving Historical Problems with Systems of Equations M5 L13: Writing and Solving Systems of Equations for Real-World Problems M5 L14: Back to the Coordinate Plane

Algebraic Reasoning: Functions

8.AFN.A Define, evaluate, and compare functions.

Oregon Mathematics Standards	Aligned Components of *Eureka Math²*
8.AFN.A.1 Understand in authentic contexts, that the graph of a function is the set of ordered pairs consisting of an input and a corresponding output.	M6 L1: Motion and Speed M6 L2: Definition of a Function M6 L4: More Examples of Functions M6 L5: Graphs of Functions and Equations
8.AFN.A.2 Compare the properties of two functions represented algebraically, graphically, numerically in tables, or verbally by description.	M6 L7: Interpreting Rate of Change and Initial Value M6 L8: Comparing Functions
8.AFN.A.3 Understand and identify linear functions, whose graph is a straight line, and identify examples of functions that are not linear.	M6 L3: Linear Functions and Proportionality M6 L6: Linear Functions and Rate of Change M6 L10: Graphs of Nonlinear Functions

Algebraic Reasoning: Functions

8.AFN.B Use functions to model relationships between quantities.

Oregon Mathematics Standards	Aligned Components of *Eureka Math²*
8.AFN.B.4 Construct a function to model a linear relationship in authentic contexts between two quantities.	M6 L6: Linear Functions and Rate of Change M6 L7: Interpreting Rate of Change and Initial Value M6 L25: Applications of Volume

Oregon Mathematics Standards	Aligned Components of *Eureka Math²*
8.AFN.B.5 Describe qualitatively the functional relationship between two quantities in authentic contexts by analyzing a graph.	M6 L9: Increasing and Decreasing Functions M6 L10: Graphs of Nonlinear Functions

Numeric Reasoning: Number Systems

8.NS.A Know that there are numbers that are not rational, and approximate them by rational numbers.

Oregon Mathematics Standards	Aligned Components of *Eureka Math²*
8.NS.A.1 Know that real numbers that are not rational are called irrational.	M1 L22: Familiar and Not So Familiar Numbers M4 L5: An Interesting Application of Linear Equations, Part 1 M4 L6: An Interesting Application of Linear Equations, Part 2
8.NS.A.2 Use rational approximations of irrational numbers to compare size and locate on a number line.	M1 L21: Approximating Values of Roots and π^2 M1 L23: Ordering Irrational Numbers

Geometric Reasoning and Measurement

8.GM.A Understand congruence and similarity using physical models, transparencies, or geometry software.

Oregon Mathematics Standards	Aligned Components of *Eureka Math²*
8.GM.A.1 Verify experimentally the properties of rotations, reflections, and translations.	M2 L1: Motions of the Plane M2 L2: Translations M2 L3: Reflections M2 L5: Rotations M2 L7: Working Backward M2 L8: Sequencing the Rigid Motions
8.GM.A.2 Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations.	M2 L7: Working Backward M2 L8: Sequencing the Rigid Motions M2 L9: Ordering Sequences of Rigid Motions M2 L10: Congruent Figures M2 L11: Showing Figures are Congruent M2 L12: Lines Cut by a Transversal
8.GM.A.3 Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.	M2 L4: Translations and Reflections on the Coordinate Plane M2 L6: Rotations on the Coordinate Plane M2 L9: Ordering Sequences of Rigid Motions M3 L1: Exploring Dilations M3 L2: Enlargements M3 L3: Reductions and More Enlargements M3 L4: Using Lined Paper to Explore Dilations M3 L5: Figures and Dilations M3 L6: The Shadowy Hand

Oregon Mathematics Standards	Aligned Components of *Eureka Math²*
8.GM.A.3 ***continued***	M3 L7: Dilations on a Grid M3 L8: Dilations on the Coordinate Plane M3 L9: Describing Dilations M3 L10: Sequencing Transformations M3 L16: Similar Right Triangles
8.GM.A.4 Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and/or dilations.	M3 L11: Similar Figures M3 L12: Exploring Angles in Similar Triangles M3 L13: Similar Triangles M3 L17: Similar Triangles on a Line
8.GM.A.5 Use informal arguments to establish facts about interior and exterior angles of triangles and angles formed by parallel lines cut with a transversal.	M2 L12: Lines Cut by a Transversal M2 L13: Angle Sum of a Triangle M2 L14: Showing Lines Are Parallel M2 L15: Exterior Angles of Triangles M2 L16: Find Unknown Angle Measures M3 L12: Exploring Angles in Similar Triangles M3 L13: Similar Triangles M3 L14: Using Similar Figures to Find Unknown Side Lengths M3 L15: Applications of Similar Figures M3 L16: Similar Right Triangles

Geometric Reasoning and Measurement

8.GM.B Understand and apply the Pythagorean Theorem.

Oregon Mathematics Standards	Aligned Components of *Eureka Math²*
8.GM.B.6 Distinguish between applications of the Pythagorean Theorem and its converse in authentic contexts.	M2 L17: Proving the Pythagorean Theorem M2 L18: Proving the Converse of the Pythagorean Theorem M2 L19: Using the Pythagorean Theorem and Its Converse
8.GM.B.7 Apply the Pythagorean Theorem in authentic contexts to determine unknown side lengths in right triangles.	M1 L18: The Pythagorean Theorem M1 L19: Using the Pythagorean Theorem M1 L20: Square Roots M2 L19: Using the Pythagorean Theorem and Its Converse M2 L21: Applying the Pythagorean Theorem M2 L22: On the Right Path M3 L16: Similar Right Triangles
8.GM.B.8 Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.	M2 L20: Distance in the Coordinate Plane M2 L22: On the Right Path

Geometric Reasoning and Measurement

8.GM.C Solve mathematical problems in authentic contexts involving volume of cylinders, cones, and spheres.

Oregon Mathematics Standards	Aligned Components of *Eureka Math²*
8.GM.C.9 Choose and use the appropriate formula for the volume of cones, cylinders, and spheres to solve problems in authentic contexts.	M6 L21: Volumes of Prisms and Pyramids M6 L22: Volume of Cylinders M6 L23: Volume of Cones M6 L24: Volume of Spheres M6 L25: Applications of Volume

Data Reasoning

8.DR.A Formulate statistical investigative questions.

Oregon Mathematics Standards	Aligned Components of *Eureka Math²*
8.DR.A.1 Formulate statistical investigative questions to articulate research topics and uncover patterns of association seen in bivariate categorical data.	M6 L18: Bivariate Categorical Data M6 L19: Association in Bivariate Categorical Data M6 L20: Analyzing Bivariate Categorical Data

Data Reasoning

8.DR.B Collect and consider data.

Oregon Mathematics Standards	Aligned Components of *Eureka Math²*
8.DR.B.2 Collect or consider data using surveys and measurements to capture patterns of association, and critically analyze data collection methods.	M6 L13: Informally Fitting a Line to Data M6 L15: Linear Models M6 L16: Using the Investigative Process M6 L17: Analyzing the Model

Data Reasoning

8.DR.C Analyze, summarize, and describe data.

Oregon Mathematics Standards	Aligned Components of *Eureka Math²*
8.DR.C.3 Analyze patterns of association between two quantitative or categorical variables and reason about distributions to compare groups.	M6 L11: Scatter Plots M6 L12: Patterns in Scatter Plots M6 L18: Bivariate Categorical Data M6 L19: Association in Bivariate Categorical Data M6 L20: Analyzing Bivariate Categorical Data

Data Reasoning

8.DR.D Interpret data and answer investigative questions.

Oregon Mathematics Standards	Aligned Components of *Eureka Math²*
8.DR.D.4 Interpret scatter plots for bivariate quantitative data to investigate patterns of association between two quantities to answer investigative questions.	M6 L6: Linear Functions and Rate of Change M6 L7: Interpreting Rate of Change and Initial Value M6 L14: Determining an Equation of a Line Fit to Data M6 L15: Linear Models M6 L16: Using the Investigative Process M6 L17: Analyzing the Model